What is Claimed is:

1. A dual capacity compressor comprising:

a power generating part including a reversible motor and a crank shaft inserted in the motor;

a compression part including a cylinder, a piston in the cylinder, and a connecting rod connected to the piston;

a crank pin in an upper part of the crank shaft eccentric to an axis of the crank shaft;

an eccentric sleeve having an inside circumferential surface rotatably fitted to an outside circumferential surface of the crank pin, and an outside circumferential surface rotatably fitted to an end of the connecting rod;

a key member for positive fastening of the eccentric sleeve to the crank pin in all rotation directions of the motor; and

an eccentric mass provided to the eccentric sleeve for rotating the eccentric sleeve around the crank pin,

thereby providing different compression capacities by re-arranging the eccentric sleeve that changes an effective eccentricity and a piston displacement following change of a direction of rotation of the motor, and preventing relative motion between the crank pin and the eccentric sleeve during operation by means of the key member actually regardless of the direction of rotation of the motor.

2. The dual capacity compressor as claimed in claim 1, wherein the key member is held at at least a part of the eccentric sleeve continuously, and designed to be held at the eccentric sleeve, additionally.

3. The dual capacity compressor as claimed in claim 1, wherein the key member holds the eccentric sleeve at a plurality of points.

4. The dual capacity compressor as claimed in claim 1, wherein the key member holds the eccentric sleeve at two points set up with reference to a center line in any direction during operation.

5. The dual capacity compressor as claimed in claim 1, wherein the key member has a length greater than an outside diameter of the crank pin.

6. The dual capacity compressor as claimed in claim 1, wherein the crank pin includes one pair of key member fitting parts formed opposite to each other.

7. The dual capacity compressor as claimed in claim 1, wherein the key member fitting parts of the crank pin are through holes in a wall of the crank pin.

8. The dual capacity compressor as claimed in claim 1, wherein the crank pin further includes at least one first oil supply hole for supplying oil between the eccentric sleeve and the crank pin.

9. The dual capacity compressor as claimed in claim 8, wherein the first oil supply hole is formed in the crank shaft so as to be in communication with an oil passage for supplying oil to various moving parts of the compressor.

10. The dual capacity compressor as claimed in claim 8, wherein the at least

one first oil hole has one pair of first oil supply holes formed in the crank pin opposite to each other.

11. The dual capacity compressor as claimed in claim 1, wherein the eccentric sleeve includes;

a track part formed along a circumference thereof for enabling rotation of the eccentric sleeve itself relative to the projection of the key member, and

a limiting part formed relative to the track part for limiting rotation of the projection of the key member.

12. The dual capacity compressor as claimed in claim 11, wherein the track part of the eccentric sleeve is a cut away part cut along a circumferential direction at a depth from a top thereof.

13. The dual capacity compressor as claimed in claim 11, wherein the track part of the eccentric sleeve is a pass through hole extended along a circumferential direction to a length at a depth from the top thereof.

14. The dual capacity compressor as claimed in claim 11, wherein the steps formed between the track part and the limiting part is parallel to an extension line connecting an axis of the crank shaft and an axis of the crank pin.

15. The dual capacity compressor as claimed in claim 14, wherein the step is spaced apart from an extension line connecting the axis of the crank shaft and the axis of the crank pin as much as a distance equal to a half of a thickness of the key member.

16. The dual capacity compressor as claimed in claim 8, wherein the eccentric sleeve further includes at least one second oil supply hole in communication with the first oil supply hole in the crank pin.

17. The dual capacity compressor as claimed in claim 16, wherein the second oil supply hole is in communication with the first oil supply hole, selectively.

18. The dual capacity compressor as claimed in claim 11, wherein the step between the limiting part and the track part is rounded.

19. The dual capacity compressor as claimed in claim 16, wherein the eccentric sleeve further includes oil cavities formed in an outside circumferential surface thereof around the second oil supply hole.

20. The dual capacity compressor as claimed in claim 16, wherein the eccentric sleeve further includes an oil groove extended from the second oil supply hole vertically in the outside circumferential surface.

21. The dual capacity compressor as claimed in claim 1, wherein the key member includes;

a first projection for projection for a length from the crank pin even when the compressor is not in operation, and

a second projection for projection for a length from the crank pin when the compressor is in operation.

22. The dual capacity compressor as claimed in claim 21, wherein the second projection has such a length that a tip thereof is not projected beyond the outside circumference of the crank pin when the compressor is not in operation.

23. The dual capacity compressor as claimed in claim 1, wherein the key member includes a stopper for limiting movement of the key member within the key member fitting parts.

24. The dual capacity compressor as claimed in claim 1, wherein the key member further includes an elastic member for supporting the key member such that at least a part of the key member is kept projected out of the crank pin regardless of operation of the compressor.

25. The dual capacity compressor as claimed in claim 23, wherein the stopper has a crank pin contact surface in conformity with an inside circumferential surface of the crank pin.

26. The dual capacity compressor as claimed in claim 23, wherein the stopper is a first stopper for limiting one direction movement of the key member.

27. The dual capacity compressor as claimed in claim 23, wherein the stopper further includes a second stopper for limiting the other direction movement of the key member.

28. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass rotates the eccentric sleeve so as to be held at a part of the key member.

29. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass generates a rotation moment with a centrifugal force for rotating the eccentric sleeve.

30. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass rotates the eccentric sleeve in a direction the same with a relative friction generated at the eccentric sleeve.

31. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass rotates the eccentric sleeve in a direction opposite to a rotation direction of the crank shaft.

32. The dual capacity compressor as claimed in claim 1 or 11, wherein the eccentric mass is provided to a part of the eccentric sleeve, of which weight is light, relatively.

33. The dual capacity compressor as claimed in claim 32, wherein the eccentric mass is arranged adjacent to the track part of the eccentric sleeve.

34. The dual capacity compressor as claimed in claim 1, wherein the eccentric sleeve is a plate member provided to the outside circumferential surface of the eccentric sleeve.

35. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass is formed as one unit with the eccentric sleeve.

36. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass is formed separate from the eccentric sleeve, and fixed to the eccentric sleeve.

37. The dual capacity compressor as claimed in claim 1, wherein the eccentric mass arranged on an upper part of the eccentric sleeve.